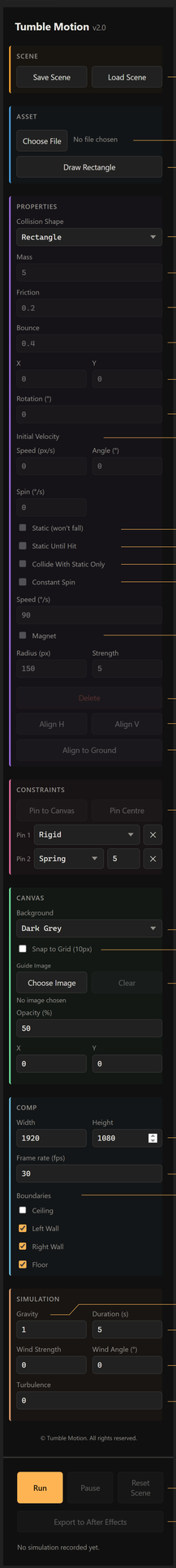
Tumble Motion Overview



Save your current scene, including all objects, settings and properties as a .tumble file.
Load a previously saved scene to pick up where you left off.

Import a PNG or JPG image as a physics object. The image is added to the canvas at its native size.
Images should not exceed the canvas dimensions.

Click and drag on the canvas to create a rectangular physics object.
Once created, rectangles behave like any other object and are exported as shape layers to After Effects.

Determines how the physics engine treats the object's edges.
Rectangle and Circle use simple bounding shapes.
Convex Hull auto-traces the outline of the image for more accurate collisions.

How heavy the object is.
Higher mass makes it harder to move and less affected by forces like wind and magnets.

How much the object resists sliding against other surfaces. 0 is frictionless, 1 is very grippy.

How much energy is retained on impact.
0 means no bounce, 1 means a perfectly elastic collision.

The exact position of the object on the canvas in pixels, measured from the top-left corner.
Useful for precise placement.

The starting angle of the object in degrees. Positive values rotate clockwise.

The speed and direction the object is moving at the moment the simulation starts.
Speed - how fast the object moves, in pixels per second.
Angle - the direction of travel in degrees. 0° is right, 90° is down.
Spin - the rotational speed at the start of the simulation in degrees per second.

Locks the object in place so it can't move. Useful for fixed obstacles.

The object stays frozen until another object collides with it, then falls normally.

The object collides only with static objects and boundaries, passing through everything else.

Keeps the object rotating at a fixed speed for the entire simulation, regardless of friction or collisions.
Set the speed in degrees per second, positive spins clockwise, negative anticlockwise.

Magnet - Pulls (or with a negative strength, pushes) other objects within the set radius.
Radius sets how far the pull reaches, positive Strength attracts, negative repels.

Removes the selected object or objects from the scene.

Lines up all selected objects along the same horizontal or vertical centre point.

Aligns selected objects to the ground.

Use Pin to Canvas to pin the selected object to a fixed point on the canvas.
Drag the orange crosshair to position the world anchor, and drag the teal dot to change which point on the object it connects to.
Use Pin Centre to pin the object through its exact centre, useful for creating cog-like objects that spin in place when paired with Constant Spin.
Each pin can be set to one of two modes:
Rigid - the object swings around the pin like a pendulum.
Spring - the object is connected by an elastic link.
When Spring is selected, set the Stiffness (1–9): lower values give a looser elastic that drifts back slowly, higher values give a firm, snappy spring.

Sets the canvas background. Choose from Dark Grey, Medium Grey or Light Grey.

When enabled, objects snap to a 10px grid when dragged, making precise alignment easier.

Set a background image for the canvas.
Once selected you can adjust its opacity and position.

The dimensions of the canvas in pixels. Set this to match your After Effects composition size.

Set this to match your After Effects composition frame rate.

Boundaries, invisible walls that keep objects within the canvas.
Toggle the Floor, Left Wall, Right Wall and Ceiling on or off independently.

Controls how strongly objects are pulled downward. 0 is weightless, 1 is normal gravity.
Negative values pull objects upward.

How long the simulation runs in seconds.

A constant force applied to all objects. The direction the wind blows is in degrees. 0° is right, 90° is down.

Makes wind less uniform by varying its strength and direction over time.
0 is perfectly steady and blows constantly in one direction.
100 produces large, chaotic gusts.

Run starts the simulation. Once the simulation has finished, the Export button becomes available.
Reset returns all objects to their starting positions and properties, ready to edit and run again.

Exports the simulation.

Importing into After Effects

1. Run your simulation in Tumble Motion and click **Export to After Effects**.
   Save the .jsx file.
2. Open After Effects and create a new composition, making sure the dimensions and frame rate match your Tumble Motion settings.
3. Import the same assets you used in Tumble Motion and drag them into the composition.
4. Make sure the composition is open and active in the timeline.
5. Go to **File** > **Scripts** > **Run Script File** and select the exported .jsx file.
6. Your layers will have Position and Rotation keyframes applied automatically.

** Tumble Motion uses a real-time physics simulation. While the default settings are designed to produce stable, realistic results, extreme values (such as very high forces, masses, velocities, or gravity) may lead to unstable or unpredictable behaviour. If a simulation behaves unexpectedly, try reducing the values or running the simulation with more moderate settings.*